

Clinical Image

Pena-Patel Technique; A Slight Modification could be Really Helpful

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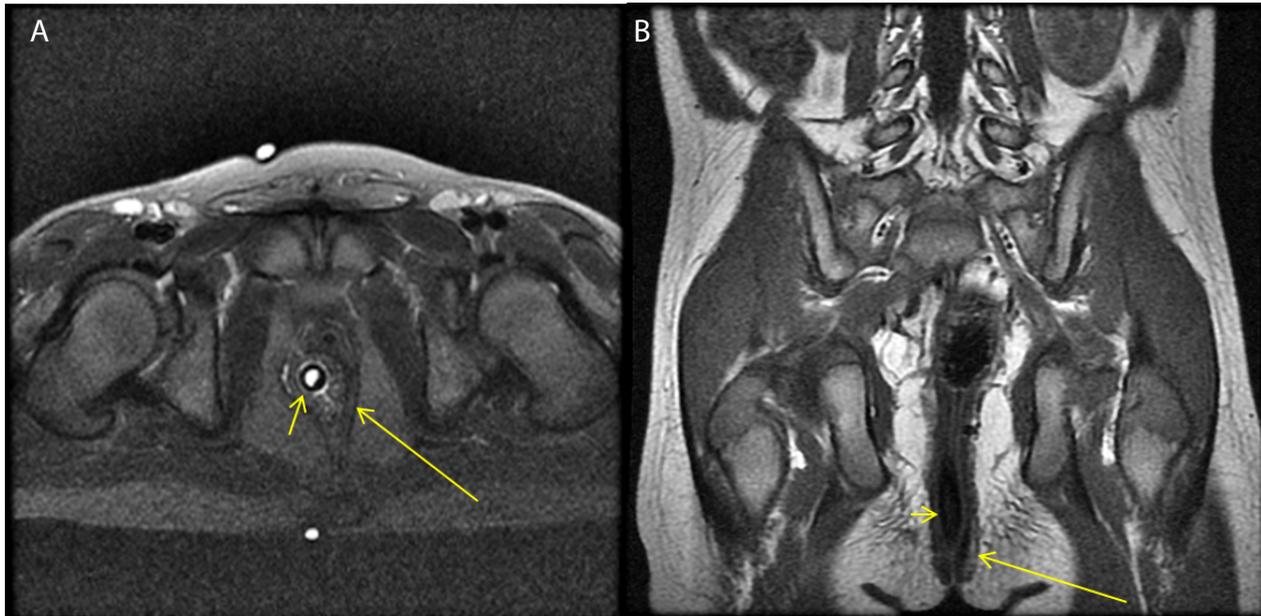


Figure 1: A) Axial T2 fat sat image shows the anal sphincter is to the left of the anus after the pull through for ARM repair (Arrow), a Foley catheter is seen in the anus (Short arrow). B) Coronal T1 image of the same patient (Arrow indicates the sphincter muscle, short arrow indicates the Foley's catheter) shows the same findings.

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Pena-Patel technique [1] was introduced to help evaluate the relationship between the anal sphincter mechanism and the anus after pull through done for patients with anorectal malformation (ARM). The basic idea of the technique is to introduce a Foley catheter into the anal canal/rectum and marking the midline of the patient anteriorly and posteriorly using an IV line. MRI sequences are then obtained in axial, sagittal and coronal planes, preferably angled for best visualization of the pelvic floor muscles and sphincter mechanism. This techniques has proven to be very valuable in evaluating symmetry of the sphincter around the anus, degree of development of the sphincter muscles and additional evaluation for any pelvic associated abnormalities (e.g pelvic mass, presacral mass, sacral anomalies, spinal cord tethering). However, the study is done in the radiology department, most patient require sedation or General anesthesia, the limited time the radiologist get to spend with the patient physically, lack of muscle stimulators and the setting of the radiology department; all these factors do not allow the radiologist to have time or chance to examine the perineum and what actually ends up happening is placing a Foley catheter into the anus/rectum and marking the midline of the patient and patient is taking to the scanner and scanning begins. The images will be interpreted by the radiologist and all is done. This is a glimpse of our modern every day “Assembly line” model of work at big medical centers. We all get under the pressure of high volume of work, the need to stream work flow for scanners and the urge to keep the waiting list as short as possible.

But this could cause errors in interpreting Pena-Patel technique MRI of some of our patients. Because in some of these patients the pull through went through a decent length of the sphincter mechanism and at its distal part happened to be located completely outside the sphincter, mostly posterior to the sphincter, probably to avoid coming too close to the scrotum. This will be found out during clinical examination and stimulation of the muscle of course. But the point here is to improve the outcome

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of Pena-Patel MRI examination. Hence we recommend marking the site of anal sphincter on the skin by a vitamin E ampule (Metallic markers cannot be used in MRI scanners) in addition to placing the Foley catheter through the rectum and marking the patient midline (Figure 1).

References

1. Levitt MA, Peña A (2007) Anorectal malformations. *Orphanet J Rare Dis* 2: 33.